0017

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

February 29, 2008

TO: Internal File

THRU: James D. Smith, Permit Supervisor JDS 03/14/08
Steve Christensen, Environmental Scientist II, Team Lead SKC

FROM: Priscilla Burton, CPSSc, Environmental Scientist III PWB by an

RE: Refuse Drainage to Pond 8, Consolidation Coal Company, Emery Deep, C/015/0015, Task ID #2929

SUMMARY:

Violation (#10005) was issued on June 14, 2007. My last review of this information was completed on January 4, 2008 (Task 2877). Division communication with the Permittee on January 10, 2008 and January 14, 2008 [Outgoing/0003.pdf] outlined requirements for compliance.

The Permittee has adequately addressed the deficiencies identified during the Task 2877 review. I recommend approval of Violation #10005 with the following condition.

R645-301-731.311, Since one composite sample cannot adequately represent 26,000 cubic yards of material that have accumulated over the last 20 years, the Division requests a commitment be placed in the MRP Chap IV.C.4. Existing Coal Mine Waste Disposal Site, as follows:
"In accordance with R645-301-731.311, Consol will core sample the existing waste pile at least one year prior to final reclamation. The core sampling will be conducted on a grid over the surface of the pile with a minimum of 5 cores. A sample from each core will be taken at 5 ft intervals. Each 5 ft. interval will be analyzed for pH, EC, SAR, Acid Base Accounting, Se, B, and texture. The results of the analysis will be reported to the Division promptly and included in the annual report. The final reclamation handling plan may change, based upon the analyses."

TECHNICAL ANALYSIS:

OPERATION PLAN

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Refuse Piles

The 4th East portal information indicates on Chapter III page 12a that acid-toxic forming material (or refuse) will be disposed of in one of three locations:

1. the permanent underground development waste site; or
2. the abandoned underground mine workings; or
3. the coarse refuse disposal area or

Plate II-1, Structures and Facilities Main Portal Area, illustrates the location of the existing temporary waste stockpile (within the northwest coal stockpile area identified as #31) and of the proposed permanent development waste burial site (identified as proposed #9).

Chapter IV.C4 Figure 1, *Existing Coal Mine Waste Pile Plan and Cross-Sections*, provides three cross-sections of the existing temporary waste pile. Chap. IV, App. IV-9 provides the geotechnical information for the existing waste pile along with one chemical analysis of the waste. The existing temporary waste pile (within the northwest coal stockpile area) will continue to receive waste during the life of mine. Currently the northwest coal stockpile area holds 37,000 cu yds of waste material. (Chap II (p. 10 and 22, also Chap. IV p. 39a). Plate IV-4 illustrates the disposal site and provides cross sections.

During final reclamation, the northwest coal stockpile area will be cleared of waste. Upon final reclamation, the waste from the northwest coal stockpile area will be taken for final burial to the permanent development waste disposal site, which is located on a hilltop directly east of the existing stockpile location (proposed item #9 on Plate II-1). The proposed permanent disposal area is 4.3 acres and has been partially excavated for gravel (see description of Permanent Underground Development Waste Disposal Site, Ch II, p. 11 and 22).

The permanent waste disposal site has a capacity of 57,640 cu yds (Chap IV.C.1. p. 24). Design information for the permanent site is provided in Chap IV.C.1 and Plate IV-4. The

information provided indicates that there is adequate capacity for the existing waste and four feet of cover.

Excess Spoil:

Main Facilities Area

The construction of the permanent development waste disposal site will create excess spoil. Approximately 68,420 cu yds of excess spoil will be used fill in portal and mineyard reclamation (see Chap. III.C.1 and Chap IV.C.1 p. 24)) and to fill in the existing Pond #8 (Chap VII, App VII-2, pg. 1). The pond covers 21.3 acres (App VI-6, Fig. 1, see #30 on Plate II-1).

4th East Portal

An excavated material storage pile at the 4th East portal can hold 128,000 cubic yards of material (page 17a, Chapter II) and covers 4.0 acres (Chap VI.B.3). This material came from:

- the development of the airshaft (70 feet deep and 16' in diameter) in the southwest corner of the site (page 17c Chapter II);
- the ramp excavation down to the portal cuts and across the face of the three portals each 8 x 14 on 45 foot centers;
- the temporary diversion construction;
- construction of the surge stockpile and coal handling facility (cross section B-B' Plate IV-3);
- the sediment pond (IV-8).

The excavated material storage pile does not contain underground development waste as defined by R645-100. The Division imposed this requirement on the Permittee due to the fact that:

1. There is a permitted disposal site for refuse within the permit area and
2. Topsoil being stored beneath the excavated material must be protected from contaminants.

Reclamation of the 4th East portal will require approximately 99,000 cubic yards as indicated on page IV-14 of the submittal. That leaves 33,000 cubic yards of excess spoil during reclamation to be graded over the surface.

Findings:

The information provided meets the minimum required for Operations Spoil and Waste Materials.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

Acid- and Toxic-Forming Materials and Underground Development Waste

Northwest Coal Stockpile Temporary Waste storage

Chap IV.C.1 p. 21 describes the characteristics of the waste in temporary storage. Fifteen samples of this waste were analyzed in 1986, when the pile size was only 9,000 cu yds. (a rate of one sample/600 cu yds). During operations, an additional 600 cubic yards may be brought to the site. The additional waste will be sampled and analyzed. The analyses will be reported in the annual report (Chapter II p. 10). The available analyses indicate that four feet of cover will be required due to acid-forming potential and SAR. Other information on the potential chemical characteristics of the coal mine waste is found in Ch. V Sections V.A.4 and Section V.A.5 of the 1990 plan.

Chapter IV Appendix IV-9 provides a 2007 description of the pile and one composite sample of two cores into the waste. The pile is 25 ft. deep at the eastern end and 10 ft. deep at the western end. The volume of the pile is approximately 37,000 yd^3. Two cores were drilled in the pile and below the pile, down 11 ft (eastern end) and 6 ft (western end) into native material. Samples from "distinct" material or at intervals of 5 ft. were taken. Samples from both cores were composited in one bucket. (Unknown whether native material was sampled and added to composite bucket. If it was, than approximately 30% of the sample would represent native soil.) One subsample of the composite was run by InterMountain Labs, Sheridan.

It is not good science to suggest that one composite sample represents 26,000 cu yds of material that has accumulated over the last 20 years, since the first sampling. For laboratory information to be meaningful, I recommend that the Division request a commitment in the MRP.

4^{th} East Portal

Drill Hole FC 702 provides an analysis above and below the I & J coal seams in the 4th East Portal location (page IV-2 through IV-6). This core indicates that the highest Electrical Conductivity and Sodium Adsorption Ratios are in the top ten feet of this material. Selenium and Boron are not a problem in the depths to be excavated. A layer of coal is encountered at approximately 34 feet. The band is about 6 inches thick and is low in pH (5.2) and has elevated

copper (4.0 ppm) and iron content (821 ppm). This coal layer must be hauled to the refuse disposal site (see deficiency R645-301-536).

Findings:

The information provided does not meet the minimum required for Operations Hydrologic Information Acid and Toxic Forming Material. Prior to approval, the Permittee must provide the following information, in accordance with:

R645-301-731.311, Since one composite sample cannot adequately represent 26,000 cubic yards of material that have accumulated over the last 20 years, the Division requests a commitment be placed in the MRP Chap IV.C.4. Existing Coal Mine Waste Disposal Site, as follows:
"In accordance with R645-301-731.311, Consol will core sample the existing waste pile at least one year prior to final reclamation. The core sampling will be conducted on a grid over the surface of the pile with a minimum of 5 cores. A sample from each core will be taken at 5 ft intervals. Each 5 ft. interval will be analyzed for pH, EC, SAR, Acid Base Accounting, Se, B, and texture. The results of the analysis will be reported to the Division promptly and included in the annual report. The final reclamation handling plan may change, based upon the analyses."

RECLAMATION PLAN

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Analysis:

Redistribution

Chap IV.C.1 describes the geology of the proposed permanent waste disposal site. The location is on an alluvial terrace approximately 40 ft thick composed of poorly sorted sand and gravels. A strata of Bluegate Shale separates the abandoned mine workings in the Ferron Sandstone unit approximately 120 ft below the surface (Chap IV, p. 19). The gravel pit cut slope was sampled in 1989 for soil analysis (Chap IV.C.1). The three soil sample analyses are found in App VII.2. Based on SAR values, soils represented by sample 1 will be isolated and used as subsoil. Unfortunately, sample depths were not provided with the analysis, so that there is no

information on how to segregate sample 1 soils from the rest. Therefore, the plan contains a commitment to resample the cover soils in the vicinity (Chap. VII. App VII-2, pg. 2).

Chap IV.C.1 (pp. 24) indicates that approximately 97,130 cu yds of subsoil and topsoil salvaged from the permanent waste disposal site excavation. To provide four feet of cover over the permanent waste disposal site, the Permittee will separately stockpile 28,710 cubic yards (Chap IV, p. 24). Chap VII, App. VII-2, p.1 and 2 describes the storage of the cover material in two separate piles on the north side of the road (Plate II-1). The difference in volume (68, 420 cubic yards) will be available to fill in Pond #8 and for reclamation of the mine site (Chap VI. App VI-2, p. 2).

Findings:

The information provided meets the minimum required for Operations Spoil and Waste Materials.

RECOMMENDATIONS:

Violation #10005 should be vacated at this time with the condition that the Permittee provide a commitment in the MRP to sample the existing waste pile one year prior to reclamation to provide a more thorough understanding of the chemical characteristics of the waste.

In addition, the Division is aware that MSHA approval for the coarse refuse and slurry pond illustrated on Plate II-2 was withdrawn on August 20, 2001. By a separate Division Order, the Division should require that all information pertaining to these structures be removed from the plan.